

REMARKS

This paper is responsive to an Office action dated September 30, 2003. Claims 1-5 were examined. Claims 6 - 30 have been added. The rejections of claims 1 – 5 are respectfully traversed for the reasons given below. The specification has been amended to correct a typographical error. Applicant respectfully submits that the amendment to the specification does not include any new matter subject matter.

Rejections under 35 U.S.C. §112, second paragraph

The Examiner has rejected claim 5 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner states that the term multiplication as it appears in claim 1 is mis-descriptive, since “the general meaning of the word ‘multiplication’ includes ‘squaring’ (Office Action, p.2, second paragraph of item 3). Applicant has amended claim 1.

Rejections under 35 U.S.C. §102(e)

The Examiner rejects claims 1– 5 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,490,352 to Schroepel (“Schroepel”). Applicant respectfully traverses all of these rejections.

Schroepel includes the statement “single inversion point doubling without general multiplication” (col. 10, line 35 – col. 12, line 22). Schroepel discloses a technique that calculates an x coordinate of a point doubling (X_d) utilizing an initial x coordinate (X) and a constant B (Equation 4 at col. 9 line 44). Schroepel then utilizes X_d and auxiliary calculations to solve the quadratic equation of Equation 3 to solve for a slope M (col. 10, lines 10 – 21). The addition of the quadratic equation calculations “increase[s] code complexity” (col. 10, lines 30 – 31). Schroepel applies this technique to consecutive point doublings described at col. 10, line 35 – col. 12, line 22. Again, Schroepel relies on solving the quadratic equation for M based on calculated X_d . The slope M , determined from solving the quadratic equation, X , and the constant B are then used in Equation 6 at col. 11, line 12 to determine R_d , which corresponds to the ratio Y_d/X_d . For each consecutive point doubling, Schroepel solves the quadratic equation for M based on X_d , and then solves for R_d utilizing the calculated slope M .

Schroeppel adds complexity by solving the quadratic equation for the slope, and does not determine slopes and x values in accordance with Applicant's claims. More specifically, Schroeppel does not disclose or suggest the following:

Claim 1 – generating a second point doubling comprising generating a new current slope value with at least one square operation, but **without computing a y coordinate, and generating a new current x value with the new current slope value**

Claim 6 – generating successive slopes with $\text{slope}_i = (x_{i-2} + x_{i-1})^2 / x_{i-1} + (\text{slope}_{i-1} + 1)$, wherein i corresponds to succession;

generating successive x values with $x_i = (\text{slope}_i)^2 + \text{slope}_i + A$

Claim 12 – repeatedly performing reciprocals and squares to determine successive x values and successive slopes for n point doublings of a point (x, y), **wherein the reciprocals are used to determine successive slopes and the squares and successive slopes are used to determine successive x values**

Claim 20 – a first sequence of instructions to determine, for successive point doublings, successive slopes based at least in part on preceding slopes and preceding x values, and **successive x values based at least in part on corresponding ones of the successive slopes and preceding x values**

Claim 27 – means for performing repeated point doublings with successive slopes based on slopes and x values of preceding point doublings, and **successive x values based on corresponding ones of the successive slopes**

For at least the reasons given above, all of the independent claims are in condition for allowance. In addition, all of the dependent claims are allowable at least because they depend on corresponding ones of the above allowable independent claims.

Conclusion

In summary, claims 1 – 30 are in the case. All claims are believed to be allowable over the art of record, and a Notice of Allowance to that effect is respectfully solicited. Nonetheless, if any issues remain that could be more efficiently handled by telephone, the Examiner is requested to call the undersigned at the number listed below.

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Respectfully submitted,



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